

WHAT IS CLAIMED IS:

- 5 1. An isolated nucleic acid molecule comprising a polynucleotide having
a nucleotide sequence at least 95% identical to a sequence selected from the
group consisting of:
- (a) a nucleotide sequence encoding the pyruvate carboxylase
polypeptide having the amino acid sequence in SEQ ID NO:2;
- 10 (b) a nucleotide sequence encoding the pyruvate carboxylase
polypeptide having the complete amino acid sequence encoded by the cosmid
clone contained in ATCC Deposit No. ____; and
- (c) a nucleotide sequence complementary to any of the nucleotide
sequences in (a) or (b).
- 15 2. The nucleic acid molecule of claim 1 wherein said polynucleotide has
the complete nucleotide sequence in SEQ ID NO:1.
3. The nucleic acid molecule of claim 1 wherein said polynucleotide has
the nucleotide sequence in SEQ ID NO:1 encoding the pyruvate carboxylase
20 polypeptide having the amino acid sequence in SEQ ID NO:2.
4. The nucleic acid molecule of claim 1 wherein said polynucleotide has
the nucleotide sequence encoding the pyruvate carboxylase polypeptide having
the complete amino acid sequence encoded by the cosmid clone contained in
25 ATCC Deposit No. ____.
5. An isolated nucleic acid molecule comprising a polynucleotide which
hybridizes under stringent hybridization conditions to a polynucleotide having
a nucleotide sequence identical to a nucleotide sequence in (a), (b) or (c) of claim
30 1 wherein said polynucleotide which hybridizes does not hybridize under
stringent hybridization conditions to a polynucleotide having a nucleotide
sequence consisting of only A residues or of only T residues.

6. The isolated nucleic acid molecule of claim 1, wherein said polynucleotide is DNA.

5 7. The isolated nucleic acid molecule of claim 1, wherein said polynucleotide is RNA.

8. A method for making a recombinant vector comprising inserting an isolated nucleic acid molecule of claim 1 into a vector.

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9. A recombinant vector produced by the method of claim 8.

10. A method of making a recombinant host cell comprising introducing the recombinant vector of claim 9 into a host cell.

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11. A recombinant host cell produced by the method of claim 10.

12. A recombinant method for producing a pyruvate carboxylase polypeptide, comprising culturing the recombinant host cell of claim 11 under conditions such that said polypeptide is expressed and recovering said polypeptide.

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13. The method of claim 12, wherein said pyruvate carboxylase is expressed 2 to 20 fold higher than its expression in *Corynebacterium glutamicum*.

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14. An isolated pyruvate carboxylase polypeptide having an amino acid sequence at least 95% identical to a sequence selected from the group consisting of:

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(a) the amino acid sequence of the pyruvate carboxylase polypeptide having the complete amino acid sequence in SEQ ID NO:2;

(b) the amino acid sequence of the pyruvate carboxylase polypeptide

having the complete amino acid sequence encoded by the cosmid clone contained in ATCC Deposit No. ____; and

5 15. A method of making amino acids comprising expressing the nucleotide sequence of claim 1 and recovering said amino acids.

16. The method of claim 15, wherein said amino acid is lysine.

10 17. The method of claim 15, wherein pyruvate carboxylase is expressed 2 to 20 fold higher than in *Corynebacterium glutamicum*.

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